REMARKS

This application has been reviewed in light of the Office Action dated April 23, 2003. Claims 1-3, 6, and 8-11 are pending, with Claim 1 in independent form. Claims 4, 5, and 7 have been cancelled by this amendment, without prejudice or disclaimer of the subject matter presented therein. Claim 1 has been amended to incorporate a modification of the limitation of now-cancelled Claim 7. Claims 3, 6, and 8 have amended as to matters of form only, and the scopes of these claims have not been narrowed. Favorable reconsideration is requested.

Claim 1 was rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,018,816 (Murray et al.), in view of U.S. Patent No. 4,671,605 (Soref), and Claims 2, 5, 8, and 9 were rejected under Section 103(a) as unpatentable over Murray and Soref in view of U.S. Patent No. 6,356,377 (Bishop et al.). Claims 3, 4, 6, and 7 were rejected under Section 103(a) as being unpatentable over Murray et al. in view of U.S. Patent No. 5,793,508 (Meli), and Claims 10 and 11 were rejected under Section 103(a) as being unpatentable over Murray et al. Cancellation of Claims 4, 5, and 7 renders their rejections moot.

Applicants respectfully traverse these rejections and submit that amended independent Claim 1, together with the remaining dependent claims, are patentable for at least the following reasons.

Claim 1 requires a variable optical delay line including a plurality of fibers and an optical switch. Each of the plurality of fibers has a first end disposed in a first linear array and a second end disposed in a second linear array. Each fiber includes a first

parallel region, a curved region, and a second parallel region, wherein the first parallel regions of the fibers are parallel to each other, the second parallel regions of the fibers are parallel to each other, and the curved regions of respective fibers differ in radii of curvature to provide a series of monotonically differing path lengths. The optical switch switches at least one optical input signal among the fibers of the plurality. Also, each fiber includes a plurality of separately switchable reflectors that are switchable between reflection and transmission to provide coarse delay increments.

One feature of Claim 1 is that each fiber includes a plurality of separately switchable reflectors that are switchable between reflection and transmission to provide coarse delay increments. Support for this feature can be found in the specification at least at page 5, lines 18-23, which is described in reference to Figure 2. This portion of the specification states that

> [a]dvantageously each fiber path includes a plurality of separately switchable reflectors, e.g. 25A, 26A of path 20A. Successive reflectors can be used to achieve coarse delay increments. Selection of particular fibers can provide fine delay increments. The advantages of this device are manifold. The delay line is fast and provides arbitrary small delay time increments. It is easily scalable to longer delay times, has low insertion loss, has coarse and fine control, and is suitable for batch manufacture.

In other words, the plurality of fibers, each having a slightly different length due to its slightly different radius of curvature, provide fine delay increments. On the other hand, the plurality of separately switchable reflectors, which are present in each fiber, are switchable between reflection and transmission to provide coarse time delay increments. This allows the device to provide a variety of different delay options. (It is to be

understood, of course, that the scope of Claim 1 is not limited to the details of this embodiment, which is referred to only for purposes of illustration.)

A form of this feature was originally present in now-cancelled Claim 7. In the rejection of Claim 7, the Office Action refers to the teachings of the Meli patent to allegedly disclose "delay lines that use a Bragg reflective element that is switchable between reflection and transmission (col. 5, lines 23-30; fig. 1, ref. 13)." See paragraph 6 of the Office Action. However, Applicants do not understand Meli to disclose a *switchable* reflection filter. In particular, Meli discloses a "selective-reflection filter 13" that reflects "radiation in a narrow wavelength band and transmit[s] the radiation . . . outside of said band." See col. 5, lines 23-30. That is, the reflection filters 13 are not understood to be *switchable* because they are each configured to reflect a particular wavelength band and transmit all other wavelengths. In other words, Applicants have not found disclosure in Meli that describes the filters 13 as being used to switch between reflecting and transmitting a particular wavelength band. In contrast, the claimed invention uses a series of switchable reflectors to adjust the amount of delay for the optical signal, whereas the Meli reflectors are understood to always reflect their particular wavelength band. .

Further, Meli is understood to disclose only a single reflection filter for each path. For instance, fiber 11a is disclosed to have a single reflection filter 13a. See col. 5, lines 1-3 and Fig. 1. Meli is not understood to have a *plurality* of *separately switchable* reflectors in *each* path to provide coarse delay increments, as required by Claim 1.

In addition, a review of the Murray et al., Soref, and Bishop et al. references has failed to reveal anything that, in Applicants' opinion, would teach or suggest the above-

discussed feature to a person having ordinary skill in the relevant art. For at least these reasons, Applicants submit that Claim 1 is patentable over these references, taken separately or in combination.

The other rejected claims in this application depend from Claim 1 and, therefore, are patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and the allowance of the present application.

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Respectfully submitted,

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